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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Yu-Cheun Jou

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12/29/2004

Qualcomm Incorporated
Patents Department
5775 Morehouse Drive
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EXAMINER

LUGO, DAVID B

ART UNIT

PAPER NUMBER

2637

DATE MAILED: 12/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/928,578

Applicant(s)

JOU, YU-CHEUN

Examiner

David B. Lugo

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 August 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-39 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-39 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 January 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>1/21/03</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: 498, 499 (Fig. 4). Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.
2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "705" has been used to designate both the fourth step and the fifth step of flowchart 700 (Fig. 7). It is suggested that the fourth method step "Determining whether the rate of C/I change is positive or negative" be labeled with reference "704" in order to correspond with the specification.
3. New corrected drawings in compliance with 37 CFR 1.121(d) are required in this application because the drawings received 1/9/02 are not clearly legible. The corrected drawings are required in reply to the Office action to avoid abandonment of the application. The requirement for corrected drawings will not be held in abeyance.

Specification

4. The disclosure is objected to because of the following informalities:

Page 7, second line of paragraph 20, "searcher unit 206" should be --searcher unit 406--.

5. The disclosure is objected to because it contains an embedded hyperlink and/or other form of browser-executable code (page 3, last line). Applicant is required to delete the embedded hyperlink and/or other form of browser-executable code. See MPEP § 608.01.

Claim Objections

6. Claims 16 and 32-37 are objected to because of the following informalities:

a. Claim 16 recites the limitation "said gain margin in lines 1-2. There is insufficient antecedent basis for this limitation in the claim. It is suggested that claim 16 be amended to depend from claim 15, which recites "a gain margin".

b. Claim 32, line 3, "means for a controller" is unclear and should be revised.

Further, the limitation "means for a controller configured for determining a rate of a change of a carrier to interference ratio" is not considered to comply with 112, 6th paragraph, since the "means for" language is modified by sufficient structure (controller) for achieving the specified function (see MPEP § 2181). If applicant intends to invoke 112, 6th paragraph, it is suggested that the limitation "means for a controller configured for determining " be amended to recite --means for determining-- or similar language.

c. Claim 33, line 1, "means for said controller" is unclear and should be revised.

d. Claim 35, line 1, "means for said controller" is unclear and should be revised.

e. Claim 37, line 1, "means for said controller" is unclear and should be revised.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

8. Claims 1, 2, 5-7, 10-15, 18-20 and 23-37 are rejected under 35 U.S.C. 102(e) as being anticipated by Tran U.S. Patent 6,735,449.

9. Regarding claim 1, Tran discloses a method in a CDMA system where a rate of change of a signal to interference ratio of a channel received at a receiver is determined (col. 3, lines 36-45) via change rate calculator 52 (col. 7, lines 39-56), where the rate of change is used to calculate a power up/down command, thereby determining a gain level of the channel (col. 8, lines 1-8).

10. Regarding claim 2, Tran states that when the rate of change is greater than zero, a power down command is generated (col. 8, lines 5-6), resulting in a value being subtracted from the current gain level to produce a final gain level.

11. Regarding claim 5, when a power down command is generated, a power level of the channel is decreased accordingly (col. 8, lines 18-20).

12. Regarding claim 6, Tran discloses that the power levels of the communication signals are transmitted at the final level after power control is performed (col. 8, lines 9-17).

13. Regarding claim 7, Tran states that when the rate of change is less than zero, a power up command is generated (col. 8, lines 6-8), resulting in a value being added to the current gain level to produce a final gain level.

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14. Regarding claim 10, when a power up command is generated, a power level of the channel is increased accordingly (col. 8, lines 18-20).

15. Regarding claim 11, Tran discloses that the power levels of the communication signals are transmitted at the final level after power control is performed (col. 8, lines 9-17).

16. Regarding claim 12, Tran further discloses generating a difference value, considered a mobility level, in difference calculator 46, where the gain level is based on the rate of change of the SIR depending on whether the mobility level meets a low mobility threshold (i.e. lies in region 68 between threshold levels $-T_1$ and T_2 – see Fig. 2).

17. Regarding claim 13, Tran discloses an apparatus 14 in CDMA system 10 comprising a receiver 32 for receiving signals along a communication channel, and a controller 36 that determines a rate of change of a signal to interference ratio of a channel (col. 3, lines 36-45) via change rate calculator 52 (col. 7, lines 39-56), where the rate of change is used to calculate a power up/down command, thereby determining a gain level of the channel (col. 8, lines 1-8).

18. Regarding claim 14, the system 10 is a CDMA system (col. 5, lines 47-52).

19. Regarding claim 15, Tran states that when the rate of change is greater than zero, a power down command is generated (col. 8, lines 5-6), resulting in a value being subtracted from the current gain level to produce a final gain level.

20. Regarding claim 18, when a power down command is generated, a power level of the channel is decreased accordingly (col. 8, lines 18-20).

21. Regarding claim 19, Tran discloses that the power levels of the communication signals are transmitted at the final level after power control is performed (col. 8, lines 9-17).

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22. Regarding claim 20, Tran states that when the rate of change is less than zero, a power up command is generated (col. 8, lines 6-8), resulting in a value being added to the current gain level to produce a final gain level.

23. Regarding claim 23, when a power up command is generated, a power level of the channel is increased accordingly (col. 8, lines 18-20).

24. Regarding claim 24, Tran discloses that the power levels of the communication signals are transmitted at the final level after power control is performed (col. 8, lines 9-17).

25. Regarding claim 25, Tran further discloses generating a difference value, considered a mobility level, in difference calculator 46, where the gain level is based on the rate of change of the SIR depending on whether the mobility level meets a low mobility threshold (i.e. lies in region 68 between threshold levels $-T_1$ and T_2 – see Fig. 2).

26. Regarding claim 26, Tran discloses an apparatus 14 in CDMA system 10 including a controller 36 comprising a means 52 for determining a rate of change of a signal to interference ratio of a channel (col. 3, lines 36-45; col. 7, lines 39-56), and means 54 for determining a gain level of the channel based on the rate of change information (col. 8, lines 9-17).

27. Regarding claim 27, Tran states that when the rate of change is greater than zero, a power down command is generated (col. 8, lines 5-6), resulting in a value being subtracted from the current gain level to produce a final gain level.

28. Regarding claim 28, Tran discloses that the power levels of the communication signals are transmitted at the final level after power control is performed (col. 8, lines 9-17).

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29. Regarding claim 29, Tran states that when the rate of change is less than zero, a power up command is generated (col. 8, lines 6-8), resulting in a value being added to the current gain level to produce a final gain level.

30. Regarding claim 30, Tran discloses that the power levels of the communication signals are transmitted at the final level after power control is performed (col. 8, lines 9-17).

31. Regarding claim 31, Tran further discloses generating a difference value, considered a mobility level, in difference calculator 46, where the gain level is based on the rate of change of the SIR depending on whether the mobility level meets a low mobility threshold (i.e. lies in region 68 between threshold levels $-T_1$ and T_2 – see Fig. 2).

32. Regarding claim 32, Tran discloses an apparatus 14 comprising a receiver 32 for receiving signals along a communication channel, and a controller 36 that determines a rate of change of a signal to interference ratio of a channel (col. 3, lines 36-45) via change rate calculator 52 (col. 7, lines 39-56), where the rate of change is used to calculate a power up/down command, thereby determining a gain level of the channel (col. 8, lines 1-8).

33. Regarding claim 33, Tran states that when the rate of change is greater than zero, a power down command is generated (col. 8, lines 5-6), resulting in a value being subtracted from the current gain level to produce a final gain level.

34. Regarding claim 34, Tran discloses that the power levels of the communication signals are transmitted at the final level after power control is performed (col. 8, lines 9-17).

35. Regarding claim 35, Tran states that when the rate of change is less than zero, a power up command is generated (col. 8, lines 6-8), resulting in a value being added to the current gain level to produce a final gain level.

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36. Regarding claim 36, Tran discloses that the power levels of the communication signals are transmitted at the final level after power control is performed (col. 8, lines 9-17).

37. Regarding claim 37, Tran further discloses generating a difference value, considered a mobility level, in difference calculator 46, where the gain level is based on the rate of change of the SIR depending on whether the mobility level meets a low mobility threshold (i.e. lies in region 68 between threshold levels $-T_1$ and T_2 – see Fig. 2).

Claim Rejections - 35 USC § 103

38. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

39. Claims 3, 8, 16, 21, 38 and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tran in view of Baker et al. U.S. Patent Application Publication 2001/0036238.

40. Regarding claims 3, 8, 16 and 21, Tran discloses a CDMA system for determining a gain level based on a rate of change of a signal to interference ratio as described above, but does not expressly disclose that the gain margin corresponds proportionally to a magnitude of the rate of change of the SIR.

41. Baker et al. disclose a CDMA system where a rate of change of an SIR value is used to change power control parameters (page 2, paragraph 33), where if the rate of change is very large, the power control parameters are adjusted proportionately (page 3, paragraph 36).

42. It would have been obvious to one of ordinary skill in the art to use the teachings of Baker et al. of generating power control parameters according to the magnitude of the rate of

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change of SIR, in the system of Tran, to ensure that the most appropriate settings for the power control parameters are utilized (see page 2, paragraph 33).

43. Regarding claim 38, Tran discloses a method in a CDMA system where a rate of change of a signal to interference ratio of a channel received at a receiver is determined (col. 3, lines 36-45) via change rate calculator 52 (col. 7, lines 39-56), where the rate of change is used to calculate a power up/down command, thereby determining a gain level of the channel (col. 8, lines 1-8). Further, when the rate of change is greater than zero, a power down command is generated (col. 8, lines 5-6), resulting in a value being subtracted from the current gain level to produce a final gain level, and when the rate of change is less than zero, a power up command is generated (col. 8, lines 6-8), resulting in a value being added to the current gain level to produce a final gain level.

44. Tran does not expressly disclose that the gain margin corresponds proportionally to a magnitude of the rate of change of the SIR.

45. Baker et al. disclose a CDMA system where a rate of change of an SIR value is used to change power control parameters (page 2, paragraph 33), where if the rate of change is very large, the power control parameters are adjusted proportionately (page 3, paragraph 36).

46. It would have been obvious to one of ordinary skill in the art to use the teachings of Baker et al. of generating power control parameters according to the magnitude of the rate of change of SIR, in the system of Tran, to ensure that the most appropriate settings for the power control parameters are utilized (see page 2, paragraph 33).

47. Regarding claim 39, Tran discloses that the power levels of the communication signals are transmitted at the final level after power control is performed (col. 8, lines 9-17).

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48. Claims 4, 9, 17 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tran in view of Ue et al. U.S. Patent 6,400,929.

49. Regarding claims 4 and 17, Tran discloses a CDMA system for determining a gain level based on a rate of change of a signal to interference ratio as described above, but does not expressly disclose that subtracting a gain margin includes increasing a data rate of the channel.

50. Ue et al. disclose a device for controlling transmission power where a transmission rate is increased when the channel condition is determined to be good (col. 7, lines 18-25, Fig. 14).

51. It would have been obvious to one of ordinary skill in the art to provide transmission power control by changing the transmission rate because it allows for such control without being affected by the environment of the mobile or transmission rate (see Ue et al., col. 1, lines 55-60).

52. Regarding claims 9 and 22, Tran discloses a CDMA system for determining a gain level based on a rate of change of a signal to interference ratio as described above, but does not expressly disclose that adding a gain margin includes decreasing a data rate of the channel.

53. Ue et al. disclose a device for controlling transmission power where a transmission rate is decreased when the channel condition is determined to be bad (col. 6, lines 65-67, Fig. 12).

54. It would have been obvious to one of ordinary skill in the art to provide transmission power control by changing the transmission rate because it allows for such control without being affected by the environment of the mobile or transmission rate (see Ue et al., col. 1, lines 55-60).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David B. Lugo whose telephone number is 571-272-3043. The examiner can normally be reached on M-F; 9:30-6.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay Patel can be reached on 571-272-2988. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

dl
12/23/04


KEVIN BURD
PRIMARY EXAMINER